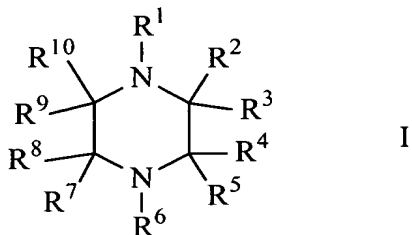


ABSTRACT

An element for the attachment of protein arrays, the element comprising a surface to which are attached a plurality of piperazine functional groups wherein the piperazine functional groups are represented by Formula I:



where

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}$, are hydrogen, alkyl, alkenyl, alkynyl, alkylhalo, cycloalkyl, cycloalkenyl, alkylthio, alkoxy, with the proviso that at least one of R^1 to R^{10} be a non-labile chemical unit that attaches the piperazine functional group to the surface of the element.